

“Waters of the United States” Under the Clean Water Act: Scientific Challenges After *Rapanos*

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Overview of Presentation

- “Waters of the US” and the *Rapanos* opinions
 - Legal and regulatory background
- EPA/Corps Joint Guidance on *Rapanos*
 - Current agency practice
- Technical and Scientific Challenges Posed by *Rapanos*

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Clean Water Act Jurisdiction

- **CWA covers “navigable waters,” defined in the statute as “waters of the US and territorial seas”**
- **“waters of the US” further defined by agencies at 40 CFR 230.3 etc.**
 - Further discussed in preambles, including “migratory bird rule”

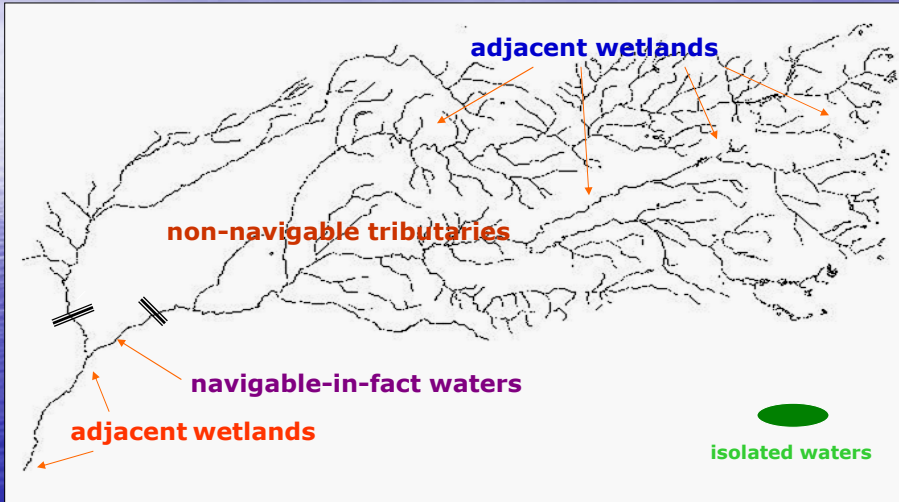
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Jurisdictional Regulations

- **Waters used/historically used/susceptible to use in interstate commerce**
- **Interstate waters and wetlands**
- **All other waters such as intrastate lakes, rivers, streams, wetlands, etc., the use, degradation, or destruction of which could affect interstate commerce**
 - So called “(a)(3)” reg
- **Impoundments of waters of the US**
- **Tributaries of above waters**
- **Territorial seas**
- **Wetlands adjacent to above waters**

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CWA Geographic Jurisdiction: The Regulations in Graphic Form



The Supremes Weigh In

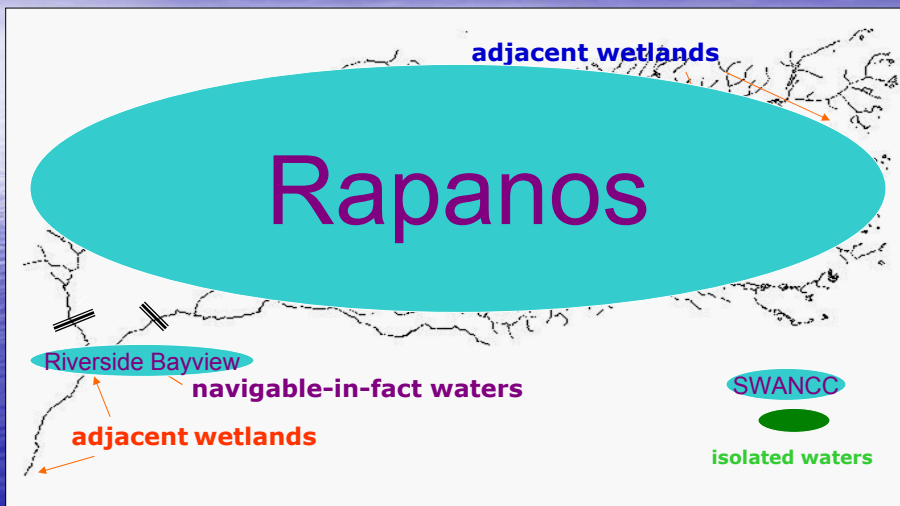
- ***Riverside Bayview*** (1985): Reasonable for agencies to construe "navigable waters" as including wetlands adjacent to other jurisdictional waters
- ***SWANCC*** (2001): "migratory bird rule" is not a valid sole basis for CWA jurisdiction
 - Reasoning could be extended further: CWA intended some connection to navigability
 - Did not invalidate existing regulations
 - Has implications for all CWA programs, not just §404

More Supremes: *Rapanos and Carabell*

- **Issues:** does CWA cover non-navigable tributaries and their adjacent wetlands?
- **Result:** nine justices and five opinions, with none having a majority of votes. Remanded.
 - **Plurality/Scalia:** JD if relatively permanent or seasonal rivers, or wetlands with continuous surface connection to such waters.
 - **Kennedy:** wetlands and waters are JD if “significant nexus” to navigable waters (individually or cumulatively), affecting phys/chem/bio of navigable waters.

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CWA Geographic Jurisdiction: The Regulations Addressed by the Supremes



Post-*Rapanos* Litigation

- Decisions thus far: 6 Appellate, 6 district court, 3 cert petitions rejected by Supremes
- Gov't position: CWA jurisdiction may be established by satisfying either plurality standard or Kennedy standard
 - Roughly 35 government court filings in 20+ cases (thus far)

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Interagency *Rapanos* Guidance

- On June 5, 2007, EPA and the Corps issued guidance interpreting WUS after *Rapanos*.
- Addresses 3 categories of waters
 - Traditional navigable waters and their adjacent wetlands
 - Waters that satisfy the Scalia standard (i.e., relatively permanent)
 - Waters that satisfy the Kennedy standard (i.e., significant nexus)
- Available on EPA website:

2-24-06 www.epa.gov/owow/wetlands

Interagency *Rapanos* Guidance: Traditional Navigable Waters

- The agencies will assert jurisdiction over:
 - traditional navigable waters (TNWs)
 - TNWs include all waters described as (a)(1) waters – navigable-in-fact, ebb/flow tide, etc.
 - Not just RHA section 10 waters
 - Wetlands adjacent to TNWs, including those without a continuous surface connection to TNWs.

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Interagency *Rapanos* Guidance: Relatively Permanent Waters

- The agencies will assert jurisdiction over:
 - Non-navigable tributaries of TNWs that are relatively permanent
 - Includes perennial streams as well as tributaries that have continuous flow at least seasonally
 - Wetlands that have a continuous surface connection to such tributaries (i.e., not separated by berm, etc.)

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Interagency *Rapanos* Guidance: Other Tributaries and Wetlands

- The agencies will assert jurisdiction over:
 - Non-navigable, non relatively permanent tributaries and their adjacent wetlands where they have a significant nexus to a TNW
 - Either individually or in combination with similarly situated waters
- Significant nexus includes consideration of both hydrologic and ecologic factors

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Interagency *Rapanos* Guidance: Related Documents and Next Steps

- Related documents include
 - Jurisdiction form to operationalize guidance
 - Coordination Memorandum, to ensure effective and timely interagency coordination
- Agencies taking public comment until 12/07 on implementation experiences (www.regulations.gov)

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Scientific Challenges Posed by *Rapanos*

- *Rapanos* opinions use jurisdictional terms different from those typically used by aquatic scientists.
 - “Relatively permanent”
 - “Significant nexus”
 - “Similarly situated”
- Challenge: does a particular water have the characteristics called for by the legal terms, as defined by the agencies and the courts?

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Jurisdictionally Relevant Characteristics

- Question after *Rapanos*: does a water have characteristics that address the legal standard? For example:
 - A water’s contribution to physical/chemical/biological integrity downstream
 - A water’s frequency and volume of flow
 - Data on other waters and wetlands in the area

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Jurisdictionally Relevant Characteristics, Continued

- Decision if particular water has characteristics called for by legal standard would ideally be based on multiple-year observations, but neither field staff nor the regulated community can wait that long.
- Scientific analyses and technical info can assist field staff to defensibly leverage observations.

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Classification Systems Can Help Leverage Observations

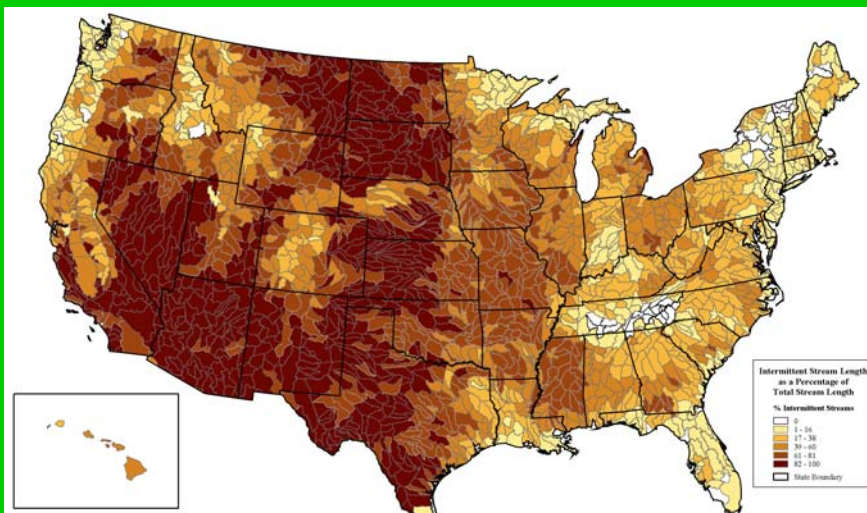
- Many classification systems are used to identify and compare potentially similar waters, such as
 - Stream order: streams of similar order may have similar functions in the landscape.
 - Stream classification: may allow extrapolation of site-specific data to stream reaches with similar characteristics
 - Wetland classification: identifies functions and values of various types of wetlands in different landscapes

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National and Local Databases Also Can Leverage Observations

- Numerous national and local databases identify location and some characteristics of waters. Examples: NHD and NWI
 - Other information sources can leverage and enhance observations and available hydro data
 - Aerial photography, USGS maps, TMDL lists
 - Consider strengths and limitations of available data
 - NHD at 1:100k does not include smaller waters
 - Does the database term match the legal term? (often not)
- 2240 How old is that map?

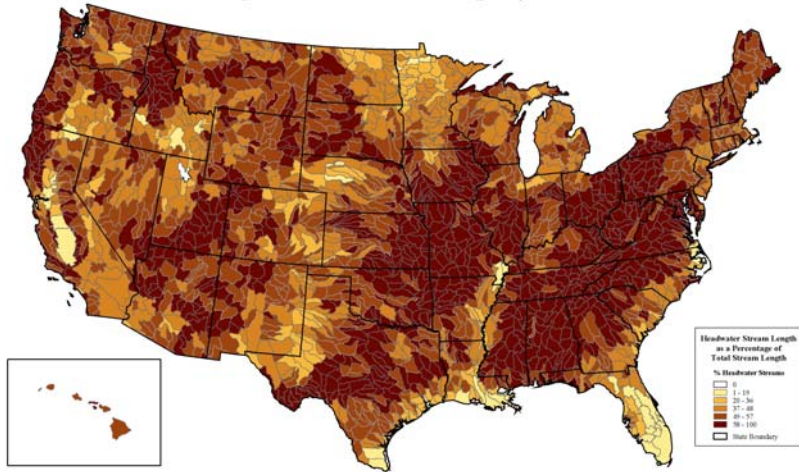
Intermittent/Ephemeral Streams



Legend: This map shows the percentage of intermittent and ephemeral streams, relative to total stream length, within each watershed. This analysis highlights the regional pattern of intermittent and ephemeral stream occurrences in the United States, excluding Alaska, where NHD data are not available. In the 49 states there are 5,484,159 total kilometers of linear streams, of which 59% (3,212,641 km) are intermittent and ephemeral. Based on data from the National Hydrography Dataset at medium resolution. The value ranges in the key were devised to reveal underlying groupings and patterns in the data displayed on the map. One mile is equal to 1.61 kilometers.

Headwater Streams

Percentage of Headwater Stream Length by Watershed



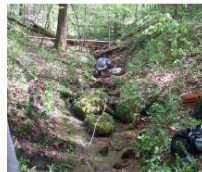
Legend: This map shows the percentage of headwater streams greater than one mile long, relative to total stream length, within each watershed. This analysis highlights the regional pattern of headwater stream occurrences in the United States, excluding Alaska, where NHD data are not available. In the 49 states there are 5,484,159 total kilometers of linear streams, of which 53% (2,915,824 km) are headwaters. Based on data from the National Hydrography Dataset at medium resolution. The value ranges in the key were devised to reveal underlying groupings and patterns in the data displayed on the map. One mile is equal to 1.61 kilometers.

Stream Assessment Methods

- **Several states and agencies are developing stream assessment methodologies**
- **Existing studies provide springboards for new tools**

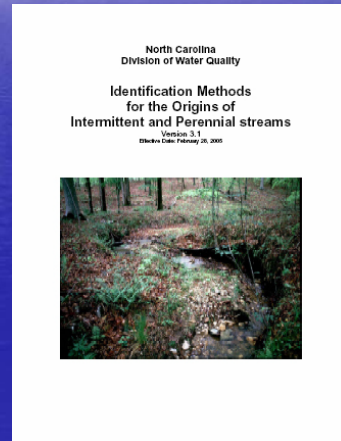
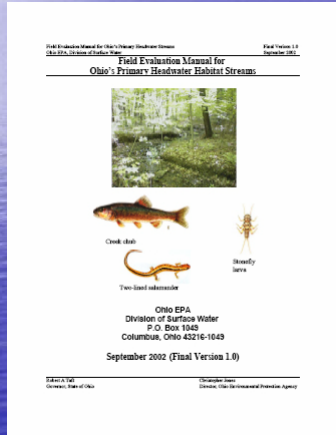


Field Operations Manual for
Assessing the Hydrologic
Permanence and Ecological
Condition of Headwater Streams



RESEARCH AND DEVELOPMENT

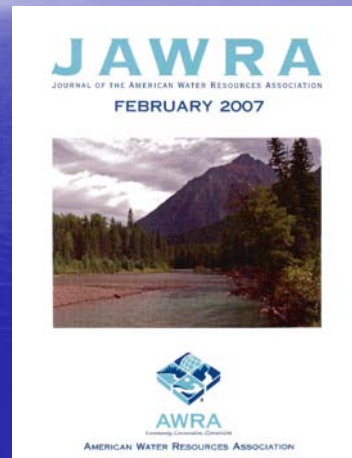
Stream Assessment Methods



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Literature Identifying Potential Relationships Among Waters

- **Special issue on headwater, ephemeral and intermittent waters**
- **Articles available online until Feb 08 at: www.blackwell-synergy.com/loi/jawr**



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Suggestions When Leveraging Observations for *Rapanos* Decisions

Terms matter.

- *Rapanos* identifies legal concepts, further defined by agencies and the courts. Those concepts might vary from scientific usage
- Databases use terms differently. Verify that databases characteristics coincide with relevant legal concepts

• **Scale matters.**

- The more detailed and specific literature and data is to the waterbody or geographic area, the stronger the conclusions will be about characteristics and relationships

• **Relationships among waters matters – a lot.**

- Anticipate expanded data and research on relationships among waters and navigable-in-fact waters

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Questions?

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